



Architectural Drafting

Course Description

In this class, the students will create residential architectural working drawings, using CAD, necessary for a standard building permit. With hands-on exercises, assignments and projects, students gain the capability to use CAD to model a house project and create and distribute industry-standard drawings.

Course Code: 100141

Program(s) of Study to which this course applies:

- Design/Pre-construction

Course Content	Crosswalk to Common Core Academic Standards	Crosswalk to Nebraska Academic Standards	Crosswalk to Nebraska Career Readiness Standards	Crosswalk Clarification
Standard 1. Students will create a floor plan.				
Benchmark 1.1 Draw exterior and interior walls. <u>Sample performance indicators:</u> <ul style="list-style-type: none">• Place relevant material symbols.• Install doors symbols.• Install window symbols.• Place openings.	ELA.WHST.11-12.6	LA.12.2.1.f	CR.1.A.4	
Benchmark 1.2 Insert fixtures, appliances, and cabinetry. <u>Sample performance indicators:</u> <ul style="list-style-type: none">• Add plumbing fixtures.• Add kitchen and laundry appliances.	ELA.WHST.11-12.6	LA.12.2.1.f SC.12.4.3.c	CR.1.A.4	Alignment presumes students will use renewable resources when insert fixtures and appliances (NE: SC.12.4.3.c).

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<ul style="list-style-type: none"> Add built-in cabinetry. Add mechanical equipment. 				
<p>Benchmark 1.3 Insert a fireplace.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> Create opening. Add hearth and mantel. Add annotations, dimensions, and symbols. 	ELA.WHST.11-12.6	LA.12.2.1.f	CR.1.A.4	
<p>Benchmark 1.4 Insert a stairway.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> Add stairwell opening. Calculate rise and run and add risers and treads. Add annotations, dimensions, and symbols. 	ELA.WHST.11-12.6	LA.12.2.1.f MA.12.3.1.f	CR.1.A.4	Alignment presumes that students will analyze the rate of change (e.g., rise and run) of measurements for the stairway (NE. MA.12.3.1.f).
<p>Benchmark 1.5 Add annotations and symbolization.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> Add room labels. Indicate room sizes. Indicate floor coverings. Show wall thicknesses. Show joist direction and size. Add attic scuttle. Place title block and border. Indicate beam sizes. 	ELA.RST.11-12.4	LA.12.2.1.f	CR.1.A.4	
<p>Benchmark 1.6 Add dimensions.</p> <p><u>Sample performance indicators:</u></p> <ul style="list-style-type: none"> Add wall locations. 	ELA.WHST.11-12.6	LA.12.2.1.f	CR.1.A.4	

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<ul style="list-style-type: none"> Add opening locations. Add all other necessary dimensions. 				
Standard 2. Students will create a foundation plan.				
Benchmark 2.1 Create exterior and interior walls. <u>Sample performance indicators:</u> <ul style="list-style-type: none"> Place relevant material symbols. Install doors symbols. Install window symbols. Place openings. 	ELA.WHST.11-12.6 MTH.G.MG.3	LA.12.2.1.f MA.12.2.4.b	CR.1.A.4	Alignment presumes that students will analyze geometric figures while creating the foundation plan (NE: MA.12.2.4.b).
Benchmark 2.2 Add support material. <u>Sample performance indicators:</u> <ul style="list-style-type: none"> Add posts, beams, girders and joists. 	ELA.WHST.11-12.6	LA.12.2.1.f	CR.1.A.4	
Benchmark 2.3 Add continuous and isolated footings. <u>Sample performance indicators:</u> <ul style="list-style-type: none"> Add wall footings. Add column footings. Label and dimension footings. 	ELA.WHST.11-12.6	LA.12.2.1.f	CR.1.A.4	
Benchmark 2.4 Add stairway. <u>Sample performance indicators:</u> <ul style="list-style-type: none"> Add stairwell opening. Calculate rise and run and add risers and treads. Add annotations, dimensions, and symbols. 	ELA.WHST.11-12.6	LA.12.2.1.f MA.12.3.1.f	CR.1.A.4	Alignment presumes that students will analyze the rate of change (e.g., rise and run) of measurements for the stairway (NE: MA.12.3.1.f).

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Benchmark 2.5 Add annotations and symbolization. <u>Sample performance indicators:</u> <ul style="list-style-type: none"> Place title block and border. Indicate beam sizes. 	ELA.RST.11-12.4	LA.12.2.1.f	CR.1.A.4	
Benchmark 2.6 Add dimensions. <u>Sample performance indicators:</u> <ul style="list-style-type: none"> Add wall locations. Add opening locations. Add all other necessary dimensions. 	ELA.WHST.11-12.6	LA.12.2.1.f	CR.1.A.4	
Standard 3. Students will create a wall section.				
Benchmark 3.1 Add structural components from footing to roof. <u>Sample performance indicators:</u> <ul style="list-style-type: none"> Draw footing. Draw stem wall. Draw floor system. Draw wall system. Draw roof system. Add annotations, dimensions, and symbols. 	ELA.WHST.11-12.6	LA.12.2.1.f	CR.1.A.4	
Standard 4. Students will create exterior elevations.				
Benchmark 4.1 Draw the required elevations in the appropriate location.	ELA.WHST.11-12.6	LA.12.2.1.f	CR.1.A.4	

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<u>Sample performance indicators:</u> <ul style="list-style-type: none"> Project elevations from floor plan and wall section. Add doors and windows (fenestration). 				
Benchmark 4.2 Add annotations and symbolization. <u>Sample performance indicators:</u> <ul style="list-style-type: none"> Add material symbols. Add roof slope triangle. 	ELA.RST.11-12.4 MTH.F.IF.6	LA.12.2.1.f MA.12.3.1.f	CR.1.A.4	Alignment presumes that students will analyze the rate of change (e.g., rise and run) for annotations related to the slope of the roof (CC: MTH.F.IF.6; NE: MA.12.3.1.f).
Benchmark 4.3 Add dimensions. <u>Sample performance indicators:</u> <ul style="list-style-type: none"> Add finished floor elevations. Indicate grade. Add head height. 	ELA.WHST.11-12.6	LA.12.2.1.f	CR.1.A.4	
Standard 5. Students will show ability to create a site plan.				
Benchmark 5.1 Draw the lot boundary. <u>Sample performance indicators:</u> <ul style="list-style-type: none"> Add property lines. 	ELA.WHST.11-12.6	LA.12.2.1.f	CR.1.A.4	
Benchmark 5.2 Indicate existing features. <u>Sample performance indicators:</u> <ul style="list-style-type: none"> Add streets. Add trees. Add utilities. Add setbacks and easements. 	ELA.WHST.11-12.6	LA.12.2.1.f	CR.1.A.4	



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Benchmark 5.3 Add annotations. <u>Sample performance indicators:</u> <ul style="list-style-type: none">Add north arrow.Add graphic scale.Add datum points.Add metes and bounds.Add legal description.Add legend.	ELA.WHST.11-12.6	LA.12.2.1.f	CR.1.A.4	
Benchmark 5.5 Add dimensions. <u>Sample performance indicators:</u> <ul style="list-style-type: none">Add building locations.Add width of all pathways.Add dimension to center line of street to property line.	ELA.WHST.11-12.6	LA.12.2.1.f MA 12.2.4.a	CR.1.A.4	



Reference Standards Sources

- 2010 SkillsUSA Championships Technical Standards for Architectural Drafting
- Northeast Community College (NECC) ARCH 1200 and 1210
- AIA Standards
- ANSI Standards
- Architectural Graphic Standards, Tenth Edition, Ramsey

Creation date: July 22, 2010

Approval date:

Revision date *(if changes made after final draft):*

Other Information

Suggestions for innovative teaching and learning strategies:	<ul style="list-style-type: none">• Job Shadow• Guest Speaker• Portfolio Development• Interdisciplinary Collaboration
Related assessments:	<ul style="list-style-type: none">• SkillsUSA USA competition• Home Builder Associations competition• Post-secondary competitions
Extended learning opportunities:	<ul style="list-style-type: none">• Internship• Dual Credit